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The core-competitiveness of enterprise?

- =Technology?
- =Price?
- =Talent?
- =Fund ?
- = Customer's Degree of Satisfaction!

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SOLID STATE RELAY & DIODE & THYRISTOR MODULES ELECTRICAL CONTROLLER



U.S.GOLD SCIENCE AND TECH. GROUP
JIANGSU GOLD ELECTRICAL CONTROL TECHNOLOGY CO.,LTD.





Company → Profile



Founded in 1992, this private high tech company is specialized in the research and production of solid state relay, diode & thyristor module, DC motor drivers and AC voltage regulator. The company has been qualified as Jiangsu high and new tech enterprise. It has got the honor as Wuxi's best 10private science & tech enterprise since 1994. Its products, the electronic module with the brand of GOLD, was listed among Jiangsu province renowned brand. The company is standing director of a council of national power electronics industry association unit. In 2002, the company was listed by the global sources organization as one of China's three major production bases of solid state relay.

- ★ The company have nearly 20 years striving in the industry obtain the lead status.
- ★ The first research institute of solid state relay in Jiangsu(In 1992).
- ★ The first use thick film integrated technology developed single in-line solid state relay(In 1994).
- ★ The first professional solid state relay and power semiconductor website in China(In 1997). Domain Name is:www.ssr.com.cn www.chinassr.com
- ★ One of the most patent technology company in China, which be awarded SSR and SCR technology patent in China and get 36 patents until 2013. Eg: Obtain 20 item patents about solid state relay .
- ★ Obtain 6 item patents about three phase solid state relay.
- ★ Obtain 5 item patents about power diode & thyristor .
- ★ Obtain 5 item patents about LED lamp design technology.
- ★ The earliest manufacturer obtain UL certification of solid state relay in China.
- ★ The production of solid state relay break through 800,000pcs , which is the most output production company in China.
- ★ As a member take part in writing solid state relay industry standards drafting.
- ★ The first successful development low pass and energy-efficient solid state relay company in China.(2009 provincial scientific research innovation project).
- ★ The first successful development high power solid state relay(600A-1600A) of company in International(obtain international patent).



Products Catalogue

JIANGSU GOLD ELECTRICAL CONTROL TECHNOLOGY CO.,LTD.



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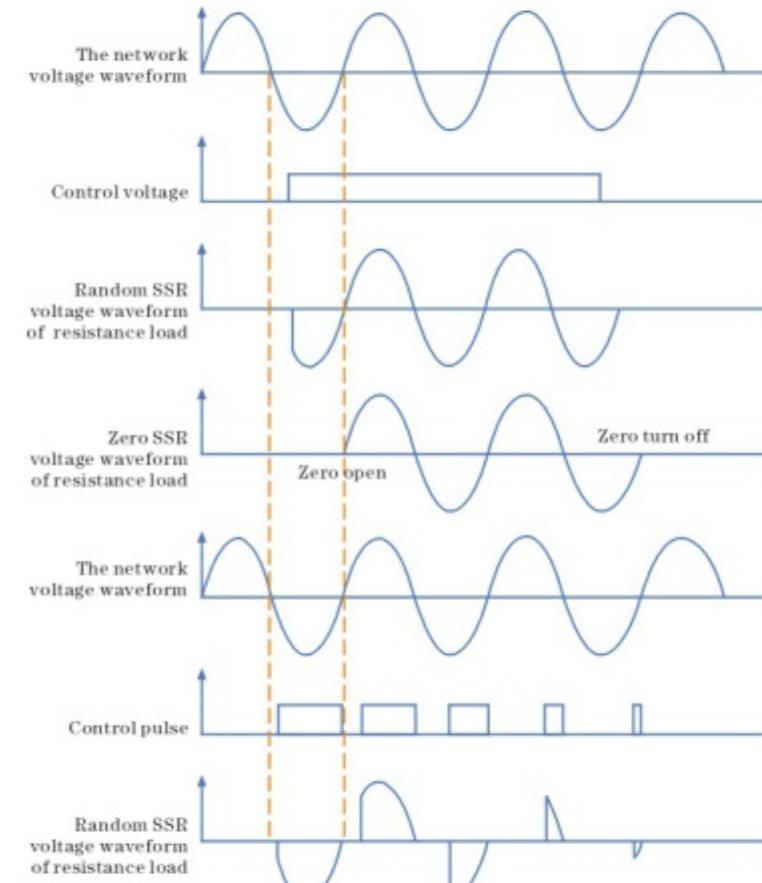
P33 International OEM products

Classification of SSR

AC solid-state relay according to switch way divide for voltage zero conduction type(zero-cross type) and random conduction type(random type);according to output switch components way devide for triac SCR output (conventional type) and SCR inverse parallel (enhancement type);according to install way devide for insert type of printed-wiring board(self-cooling, not necessary heatsink) and fixed in metal on the backplane device type (Radiator cooling).In addition constant current type and current limiting of DC3-32V in input terminal.

The Difference of Zero Cross and Random of SSR

When the input terminal offer control signal,Random SSR output terminal immediately conduction (speed for microsecond),but zero cross SSR is wait for the load voltage reach zero area(about $\pm 10V$) only open conduction. When the input terminal cancel control signal, zero cross type and random type are turn off when less than maintaining current. Although zero cross type SSR can cause maximum half cycle time delay, reduce the impact of load and radio frequency interfere of produce become idea switching device.in "single-blade single throw." switch occasions, in most widely used with this type. The characteristics of random SSR is reaction speed, it can control phase trigger pulse reach easily change AC network voltage, thereby applied to accurately tempering and aiming etc resistance loading and part of inductive occasion, the company produces the solid-state relay are most of zero cross type. If you need random type, please remark.



The Difference of The Conventional Type of Triac SCR Output and The Enhancement Type Inverse Parallel of SCR

In the inductive load occasion, when SSR by state turn off, due to the voltage and the current phase disaccord, will produce a large voltage build-up rate dv/dt plus on triac SCR of ends. If the value overmore triac SCR dv/dt index (typical values for $300V/\mu s$), it will lead to delay turn off, and even failures. SCR for single polarity working condition, only by static voltage build-up rate dv/dt influence, two pcs SCR anti parallel composition of enhanced SSR than by a triac SCR constitute the common type of commutation dv/dt SSR have greatly improved (dv/dt typical values for $500V/\mu s$), so in inductive load or capacitive load occasions appropriate selection enhanced SSR. more than 40A AC solid-state relay use two pcs SCR anti parallel composition output of enhanced SSR in our company.

Solid-state Electronic Application

Solid state relay is kind of industrial control electronic application, which is made up by power semiconductor device primarily, it compares with traditional electromagnetic contactor, ssr is more high performance, intelligent, digital, systematic and green direction development.

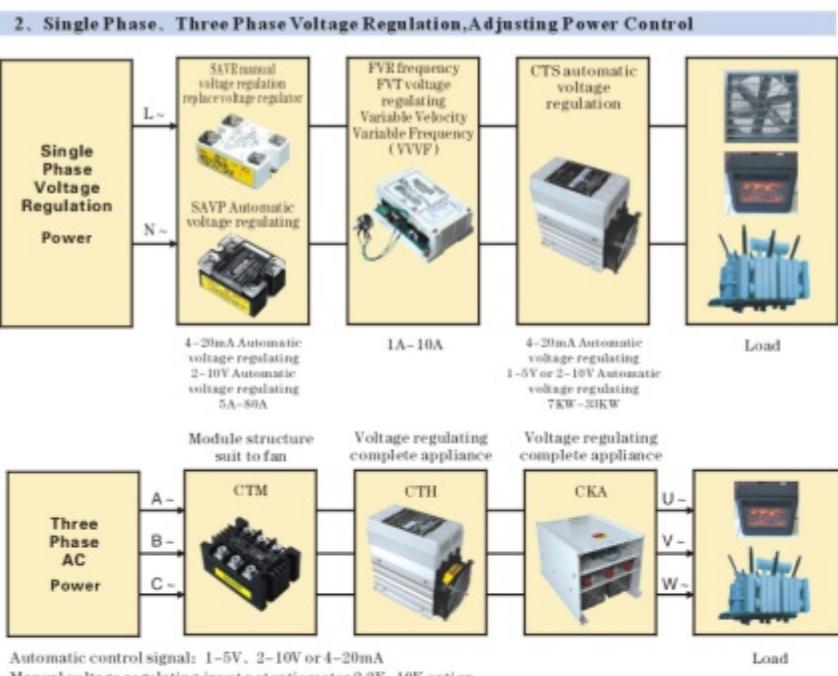
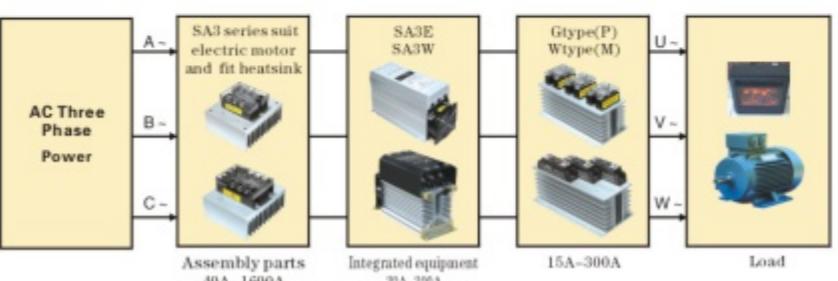
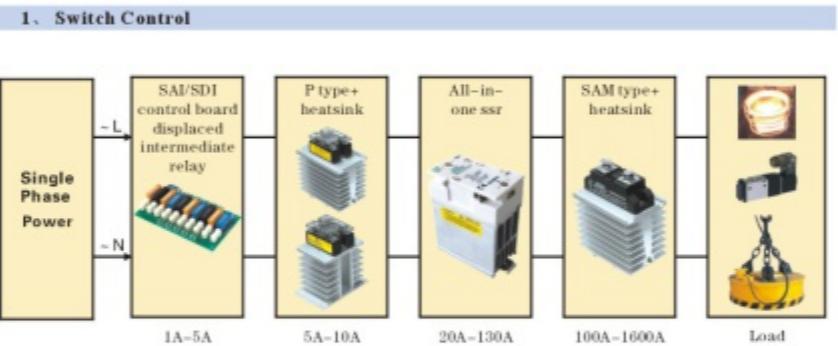
Solid state relay, solid state contactor, solid state switch take place of electromagnetic relays in the near future.

Selection specification:

The voltage of internal components is more than 1000VAC, whatever 220V or 380V for inductive load and inductive load, solid state relay can be used for them , it is very important to choose the current of SSR. ★ When solid state relay is used for heating load, because of the cold resistance effect (the resistance value is 60% of heating wire value when it is cold state), the SSR's current should be 1.67 times bigger than the actual working current in order to prevent the over-current of solid state relay.

★ If solid state relay is used for driving single phase AC motor, because motor is inductive load, operating current is 3.5times bigger than work current. When selection, the current of SSR should be 3.5 times bigger than actual work current. In the same way, if three phase solid state drives three phase motor, When selection, the current of SSR should be 7 times bigger than actual work current in order to prevent the over-current of solid state relay.

★ When work current is more than 5A , it is should be used with heat sink and Silicone Grease. Silicone Grease must be used between heat sink and SSR.



Automatic control signal: 1-5V, 2-10V or 4-20mA

Manual voltage regulating: input potentiometer 2.2K-10K option

3. Compensation Circuit Capacitor Flig-cut Switch

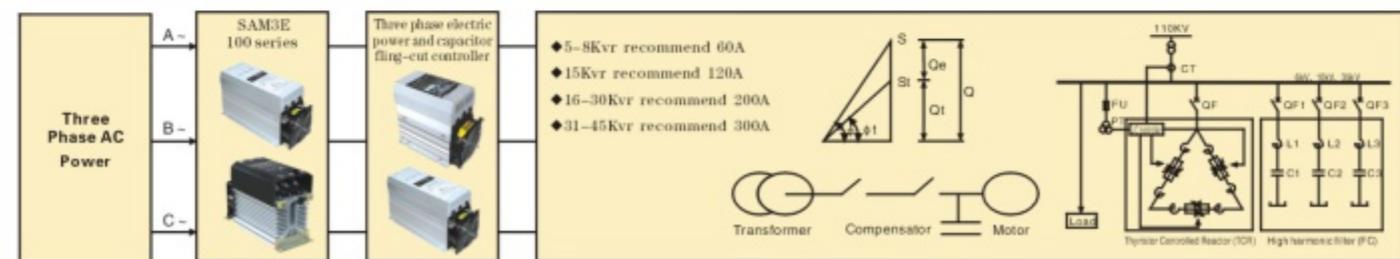




Fig 1



Fig 2



Fig 3

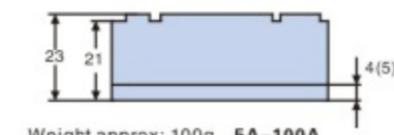
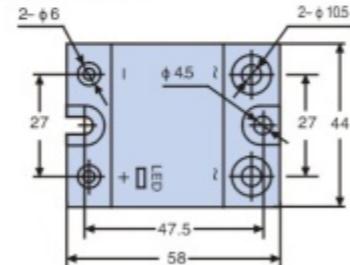


Fig 4

AC SSR of Single, Dual In-line		CE
Type	SAQ2402D	SAI4002D SAI4005D SAE4005D
Main technical parameter		
Load voltage	24~280VAC	24~280VAC or 40~480VAC
Max Load current	2A(Fig 1)	2A(Fig 2) 5A(Fig 3) 8A(Fig 4)
Isolation bet.In & out	Optical isolation	≥2000VAC 1min
Isolation to case		≥2500VAC 1min
Control voltage	3~15VDC or 15~28VDC	
Control current	6~25mA Need limit current	
Turn-on voltage	≤1.1VAC	
Off-state leakage	≤0.5mA	
Off-state dv/dt	300V/μs	
On or off time	10ms	
Frequency range	47/63Hz	
Operating temperature	-50~80°C	
Internal actual device(Triac)	3A (Long-term current 1.2A)	6A (Long-term current 1.5A) 12A (Long-term current 2.5A) 16 (Long-term current 5A)
Applications	Contactor coil, Electromagnet, AC micro-motor, Heating, etc.	



Dimensions(mm):

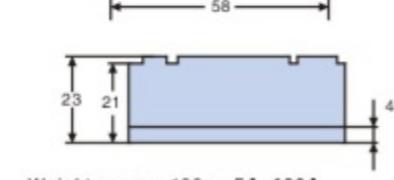
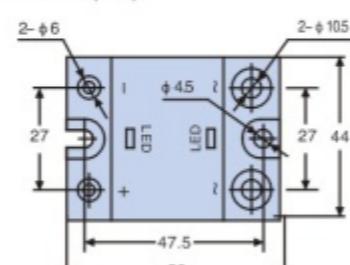


Weight approx: 100g 5A-100A

Type	SAP4805D SAP4810D SAP4820D SAP4850D SAP4860D SAP4880D SAP4825D SAP4840D	
Load voltage range	40~530VAC	
Max Load current	5A 10A 20A 25A 40A 50A 60A 80A 90A 100A	
Isolation bet.In & out	Optical isolation ≥2500VAC 1min	
Isolation to case	≥2500VAC 1min	
Control voltage range	3~32VDC	
Control current	6~20mA(20mA@max input 32VDC)	
Output	Zero switching	
Turn-on voltage	≤1.3VAC	
Off-state leakage	≤8mA	
Off-state dv/dt	300V/μs	500V/μs
On or off time	10ms @ 50Hz	
Frequency range	47/63Hz	
Status indicator	LED	
Operating temperature	-50~80°C	
Internal actual device	12A 16A 24A 41A 50A 60A 80A 90A 100A 120A	
Applications	Electric heating, Plastic machinery, Automation and control, etc.	



Dimensions(mm):



Weight approx: 100g 5A-100A

Type	SAP4805D-L SAP4810D-L SAP4820D-L SAP4850D-L SAP4860D-L SAP4880D-L SAP4825D-L SAP4840D-L SAP4890D-L SAP48100D-L	
Load voltage range	40~530VAC	
Max Load current	5A 10A 20A 25A 40A 50A 60A 80A 90A 100A	
Isolation bet.In & out	Optical isolation ≥2500VAC 1min	
Isolation to case	≥2500VAC 1min	
Control voltage range	3~32VDC	
Control current	6~20mA(20mA@max input 32VDC)	
Output	BCR,Zero switching	Two SCR inverse parallel, Zero switching
Turn-on voltage	≤1.3VAC	
Off-state leakage	≤8mA	
Off-state dv/dt	300V/μs	500V/μs
On or off time	10ms @ 50Hz	
Frequency range	47/63Hz	
Status indicator	In LED and out on LED	
Operating temperature	-50~80°C	
Internal actual device	12A 16A 24A 41A 50A 60A 80A 90A 100A 120A	
Applications	Electric heating, Plastic machinery, Glass equipment, etc.	



AC Solid State Relay

Innovation and Service

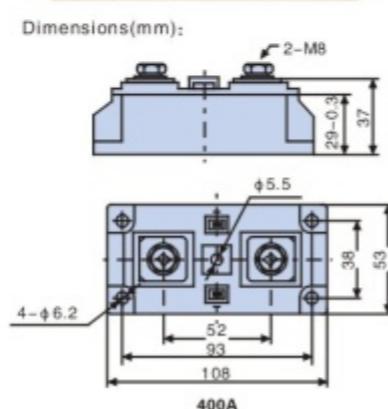
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SSR with safe cover						
Type	SAP4805D-K	SAP4810D-K	SAP4820D-K	SAP4830D-K	SAP4840D-K	SAP4860D-K
Main technical parameter						
Load voltage	90~480VAC					
Max Load current						
5A	10A	20A	25A	40A	60A	
Isolation bet.In & out,to case						
≥2000VAC 1min; ≥2500VAC 1min						
Control voltage						
3.5~32V						
Control current						
5~25mA(内置恒流电路)						
Turn-on voltage						
≤1.3VAC						
on or off time						
10ms@50Hz						
off-state leakage						
<3mA						
Status indicator						
LED						
Operating temperature						
-40~80°C						
Internal actual device						
12A	16A	24A	41A	50A	80A	

Dimensions(mm):

5A-60A Series



AC SSR of Module Type

Type	SAM40400D
Load voltage range	40~530VAC
Max Load current	400A
Isolation bet.In & out	Optical isolation ≥2500VAC 1min
Isolation to case	≥2500VAC 1min
Control voltage range	4~32VDC
Control current	5~25mA(build-in constant current circuit)
Output	Two SCR inverse parallel, Zero switching
Turn-on voltage	≤1.3VAC
Off-state leakage	≤8mA
Off-state dv/dt	500v/μs
On or off time	10ms@50Hz
Frequency range	47/63Hz
Status indicator	LED
Operating temperature	-50~80°C
Internal actual device(Use two SCR antiparallel)	460A
Applications	Electric heating, Glass equipment, Heat treatment, Motor control, etc.



AC SSR of Module Type							
Type	SAM4060D	SAM4080D	SAM40100D	SAM6060D	SAM6080D	SAM60100D	
Main technical parameter							
Load voltage range	40~530VAC			40~800VAC			
Max Load current							
60A	80A	100A	120A	150A	200A	300A	
Isolation bet.In & out							
Optical isolation ≥2500VAC 1min							
Isolation to case							
≥2500VAC 1min							
Control voltage range							
4~32VDC							
Control current							
6~20mA(20mA@ max input 32VDC)							
Output							
Two SCR inverse parallel, Zero switching							
Turn-on voltage							
≤1.3VAC							
Off-state leakage							
≤8mA							
Off-state dv/dt							
500v/μs							
On or off time							
10ms@50Hz							
Frequency range							
47/63Hz							
Status indicator							
LED							
Operating temperature							
-50~80°C							
Internal actual device							
80A	90A	110A	130A	160A	260A	320A	
Applications							
Electric heating, Glass equipment, Heat treatment, Motor control, etc.							

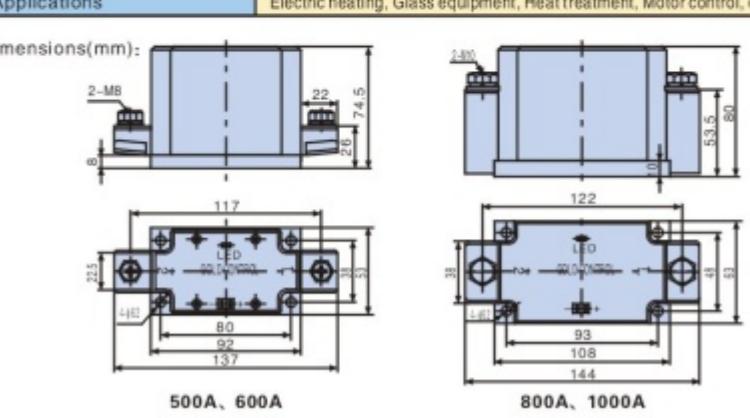
Dimensions(mm):

Weight approx: 140g 60A-120A(25 width) Weight approx: 220g 150A-300A(34 width)



AC SSR of Pressure Connection Type

Type	SAM80500D	SAM80600D	SAM80800D	SAM801000D
Load voltage range	40~1000VAC			
Max Load current	500A	600A	800A	1000A
Isolation bet.In & out	Optical isolation ≥2500VAC 1min			
Isolation to case	≥2500VAC 1min			
Control voltage range	4~32VDC			
Control current	6~25mA(build-in constant current circuit)			
Output	Two SCR inverse parallel,Zero switching			
Turn-on voltage	≤1.9VAC			
Off-state leakage	≤10mA			
Off-state dv/dt	800v/μs			
On or off time	10ms@50Hz			
Frequency range	47/63Hz			
Status indicator	LED			
Operating temperature	-50~80°C			
Internal actual device(Use two SCR antiparallel)	500A	600A	800A	1000A
Applications	Electric heating, Glass equipment, Heat treatment, Motor control, etc.			

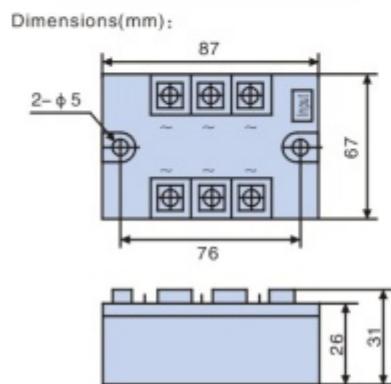




AC Solid State Relay

Innovation and Service

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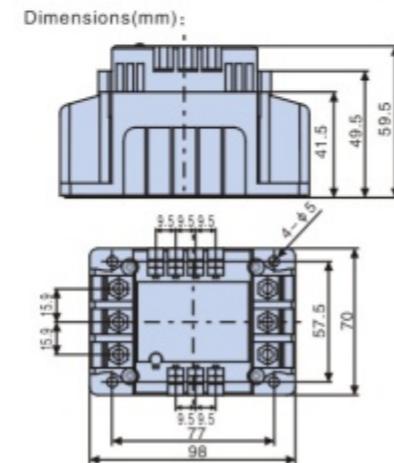


Weight approx: 260g 10A-30A

AC SSR of Three Phase



Main technical parameter	Type	SA3-4010D	SA3-4015D	SA3-4025D	SA3-4030D
Load voltage range	40~530VAC				
Max Load current	10A	15A	20A	25A	30A
Isolation bet.In & out	Optical isolation ≥2500VAC 1min				
Isolation to case	≥2500VAC 1min				
Control voltage range	4~32VDC				
Control current	8~32mA(max32mA@input 32VDC)				
Output	BCR output, Zero switching				
Turn-on voltage	≤1.3VAC				
Off-state leakage	≤3mA				
Off-state dv/dt	300V/μs				
On or off time	10ms@50Hz				
Frequency range	47/63Hz				
Status indicator	LED				
Operating temperature	-50~80°C				
Internal actual device(Triac)	16A	20A	24A	26A	41A
Applications	Fan, Motor control, Machine control, Electric heating, etc.				



AC SSR of Three Phase



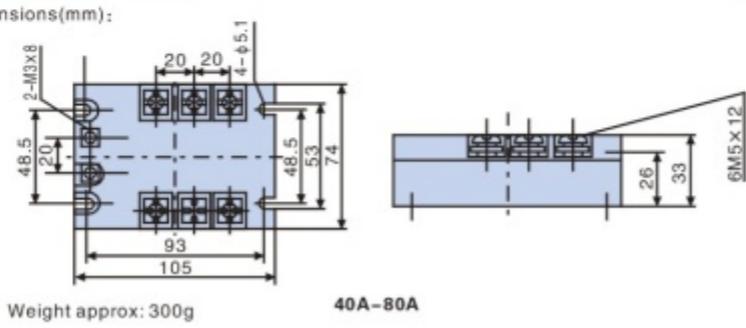
Main technical parameter	Type	SA3-4040D	SA3-4060D	SA3-66100D	SA3-66120D	SA3-66150D	SA3-66200D	SA3-66300D							
Load voltage range	40~530VAC														
Max Load current	40A	60A	80A	100A	120A	150A	200A	300A							
Isolation bet.In & out	Optical isolation ≥2500VAC 1min														
Isolation to case	≥2500VAC 1min														
Control voltage range	4~32VDC														
Control current	5~25mA(build-in constant current circuit)														
Output	Triac,Zero switching	Two SCR inverse parallel, Zero switching													
Turn-on voltage	≤1.3VAC														
Off-state leakage	≤3mA														
Off-state dv/dt	300V/μs	500V/μs													
On or off time	10ms@50Hz														
Frequency range	47/63Hz														
Status indicator	LED														
Operating temperature	-50~80°C														
Internal actual device	50A	70A	90A	120A	130A	160A	220A	320A							
Applications	Fan, Motor control, Machine control, Electric heating, etc.														



40A-80A



100A-300A



Weight approx: 300g 40A-80A

AC SSR of SAD Double-channel

Performance and Application

- Noncontact switch,zero current turn off
- Non contactor switch,millions of times switch lifetime

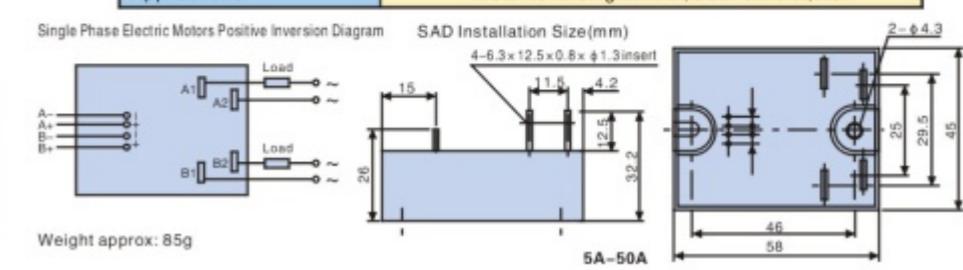
- Used for programmable control, various automatic control equipment and computer output control interface etc
- Used for various kinds of double channel control occasions, especially suitable for single-phase motor positive inversion control



Performance Parameter

Main technical parameter	Type	SAD4805	SAD4810	SAD4815	SAD4825	SAD4840
Load voltage range	40~530VAC					
Max load current	10A	15A	20A	25A	40A	60A
Isolation to case	≥2500VAC 1min					
Isolation bet.In & out	Optical isolation ≥2500VAC 1min					
Control voltage range	5~15V or 15~32V					
Input Control Current	5~25mA					
Output	BCR output, Zero switching					
Turn-on voltage	≤1.2V					
Off-state leakage	≤2mA					
On or off time	10ms@50Hz					
Internal actual device	16A	20A	24A	26A	41A	80A
Applications	Motor reversing control, Dual Control,etc.					

Single Phase Electric Motors Positive Inversion Diagram



Weight approx: 85g



Main Technical Parameter of Solid State Contactor

Main contacts: 16A, 25A, 40A, 50A(Controlled silicon output)

Auxiliary contacts: NO, NC(2A, Contact type)

Control mode: 5V~12VDC or 90~280VAC choose any

Dimension: 96x68x60mm(lengh x wide x high)

Installation size: 78x57mm, 4-M4

Solid State Contactor

Patent production CE

As an electronic switch with the feature of no noise, no spark, no wear, it can directly replace electromagnetic relays.

Main technical parameter	Type	SAT4016	SAT4025	SAT4040	SAT4050	SAT4060
Load voltage range	40~530VAC					
Max Load current	16A	25A	40A	50A	60A	80A
Isolation bet.In & out	Optical isolation ≥2500VAC 1min					
Isolation to case	≥2500VAC 1min					
Control voltage range	12VDC & 110VAC/220VAC (need to choose)					
Control current	5~25mA(build-in constant current circuit)					
Turn-on voltage	≤1.3VAC					
Off-state leakage	≤7mA@220VAC					
Off-state dv/dt	500V/μs					
On or off time	10ms@50Hz					
Frequency range	47/63Hz					
Status indicator	LED					
Operating temperature						



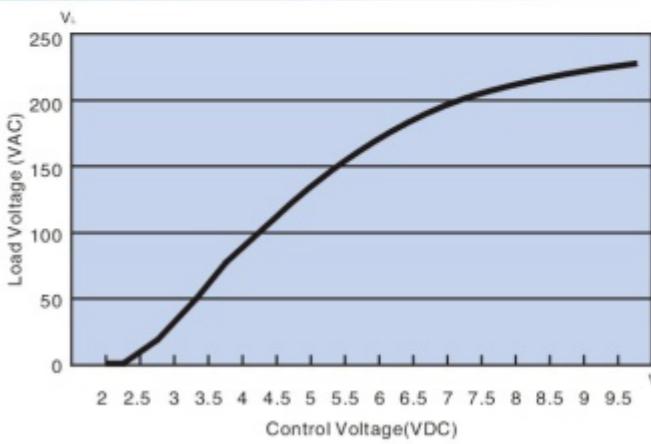
SAVP Series Voltage Regulation Module

Function and Characteristic

This module photoelectric isolate between input and output, by changing the control signal, it can make the output load voltage from 0 to power supply voltage continuously, this product is convenient installation, wiring simple, requires no external any auxiliary power can be used, etc. Its stable voltage regulating can be used in different occasion of light and AC adjustable speed for load 380VAC or 220VAC alternating voltage regulation.

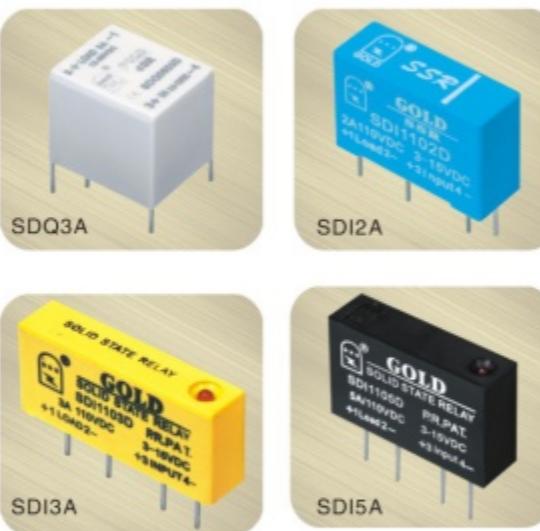


Input / Output Graph



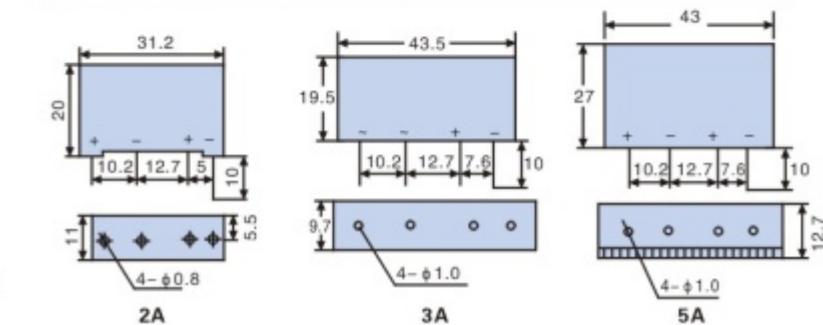
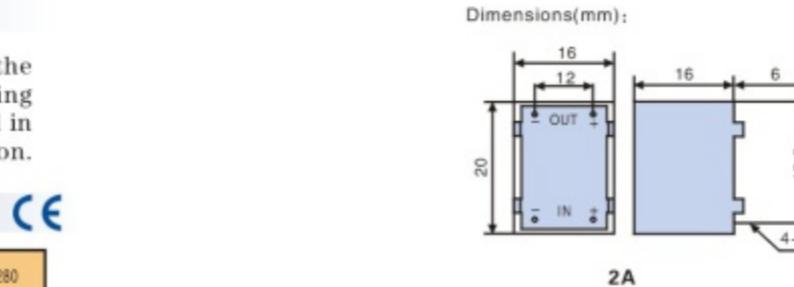
Voltage Regulation Module of Adjust Resistance Type

Type	SAVR110	SAVR1125	SAVR1140	SAVR2240	SAVR2260	SAVR2280		
Load adjusting voltage	0~110VAC			0~220VAC				
Current ratings	10A	25A	40A	60A	10A	25A	40A	60A
Adjusting resistance	470K							
Link bet.in&out	The input and output of products is not isolated, please choose insulated good potential and knob to prevent shock!							
Isolation to case	≥2500VAC 1min							
Turn to voltage	≤2V (Effective heating power consumption 1V × work current)							
Operating temperature	-40~80°C							
Internal actual device(Triac)	16A	41A	50A	60A	16A	26A	41A	60A
Applications	Lamp control, Speed Control, Transformer load(±20%),etc.							



DC SSR of Single In-line

Main technical parameter	Type	SDQ0603D	SDI1102D	SDI1103D	SDI3003D	SDI1105D	SDI3005D
Load voltage	12~60VDC	12~110VDC	12~110VDC, 12~300VDC				
Max Load current	3A	2A	3A	5A			
Isolation bet.in & out			≥2000VAC 1min				
Isolation to case			≥2500VAC 1min				
Control voltage			3~15V or 15~28V				
Control current			3~30mA				
Turn-on voltage drop	≤0.3V	≤1.3V					
Off-state leakage			<0.05mA				
Switch time			≤0.1ms				
Status indicator	NO	LED					
Operating temperature			-40~80°C				
Internal actual device	mosfet 6A	Darlington 8A	11A	20A			
Applications	Electromagnet, Relay coil, DC Micro Motor, Bulb, etc.						



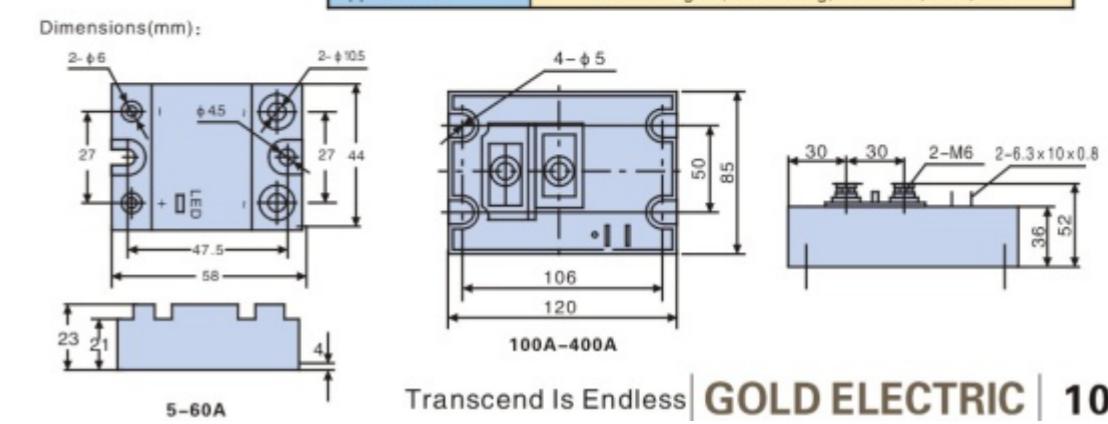
Performance Parameter

Type	SAVP1110	SAVP1125	SAVP1140	SAVP2240	SAVP2260	SAVP2280		
Load adjusting voltage	0~110VAC			0~220VAC				
Current ratings	10A	25A	40A	60A	10A	25A	40A	60A
Control mode	2~10VDC or 4~20mA							
Isolation bet.In & out	≥2500VAC 1min							
Isolation to case	≥2500VAC 1min							
Output voltage drop	110~2VAC	220~2VAC						
Min output turn to voltage	≤2.5VAC							
Operating temperature	-40~80°C							
Internal actual device(Triac)	16A	41A	50A	60A	16A	26A	41A	60A
Applications	Lamp control, Speed Control, Transformer load(±20%),etc.							



Type	SDP Series	SDM Series
Load voltage range	12~6VDC, 12~110VDC, 12~480VDC, 12~600VDC	48~400VDC, 48~1000VDC
Max Load current	10A 20A 40A 60A	100A 200A 300A 600A
Isolation bet.In & out		≥2500VAC 1min
Isolation to case		≥2500VAC 1min
Control voltage range	3~15V, 15~32V	
Control current	5~30mA	
Turn-on voltage	≤1.5V	
Off-state leakage	<1mA	
Status indicator	LED	
Operating temperature	-40~80°C	
On off time	≤2ms	
Internal actual device	16A 30A 50A 80A 100A 200A 400A 600A	
Applications	Electromagnet, DC heating, DC Motor, Bulb, etc.	

DC SSR of Horizontal , DC SSR of Module



Three-phase AC Motor Positive / Reversion Controller


SAR Series

SAR Series Application Introduction



This controller is a new type of three-phase motor positive inversion controller, used to control within 4KW power of three-phase motor. The built-in electronic interlock circuit can effectively prevent the at the same time (SCR) in positive inversion incorrect operation at the same time conduction. If turn on to change direction to another direction was wrong, the motors will stop turning. LED display motors direction, green show forward, red show backward, its output terminal using SCR chip reverse parallel technology, in AC return pathline cascode inductive choke coil, can effectively restrain the switch or switching instant current impulse of

SCR damage, while the built-in voltage dependent resistor to voltage protection and RC surge current absorbing circuit, so has the high transient overvoltage and surge current bear ability, the three-phase positive inversion widely in machine tool, travelling crane control, strobe control etc.

This controller adopt is three-phase two control or three-phase three control principle, is through which two phase voltage phaseconversion to achieve motor reversing function. According to power please choice heatsink and special fast fuse, also install temperature control switch on the heatsink.

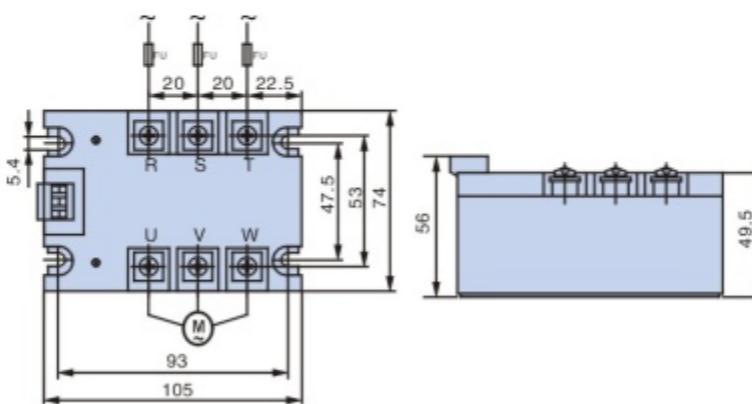
SAR Series Function and Characteristic

- ◆ Input and output isolation between the photoelectric; withstand voltage $\geq 2000\text{VA}$.
- ◆ Built-in reversing input control interlock function.
- ◆ With the LED indicator positive inversion working state instruction.
- ◆ Three-phase into lines using inductance choke, Can effectively prevent switching transient current cause module damage.
- ◆ Isolation voltage $\geq 2500\text{VAC}$ 1min.
- ◆ Input control voltage range: 12~24VDC.
- ◆ Adopt SCR inverse parallel as the output components of power, with high dv/dt index, good thermal stability, long service life, etc.

SAR Series Specification

SAR16T50DY(A)	Suit electric motor $\leq 1.5\text{KW}$ Control Voltage 12~24VDC
SAR16T60DY(A)	Suit electric $1.5\text{KW} \leq \text{motor} \leq 2.2\text{KW}$ Control Voltage 12~24VDC
SAR16T80DY(A)	Suit electric $2.2\text{KW} \leq \text{motor} \leq 3.0\text{KW}$ Control Voltage 12~24VDC
SAR16T100DY(A)	Suit electric $3.0\text{KW} \leq \text{motor} \leq 4.0\text{KW}$ Control Voltage 12~24VDC

Dimension Drawing(mm)



Fan Motor Speed Controller


MFC-I
(3A-25A)

MFC-B
(2A-5A)

MFC-D
(7A-20A)

Description: according to customer requirements custom-made high-power three-phase positive inversion controller.

Technical Performance Characteristics



Mainly used for fan speed control, reheating furnace of tempering pressure regulating and high-power bulb surge, etc. This product is smaller, wiring installation and use extremely is all convenient. At work, stable function and have the function of anti-jamming.

A. Single-phase Fan Goveror

The Main Technique Parameters

The product model : MFC-I-300W(3A) MFC-I-500W(5A) MFC-I-750W(7.5A)
MFC-I-1KW(10A) MFC-I-1.5KW(16A) MFC-I-2KW(25A)

Voltage supply: 110VAC or 220VAC

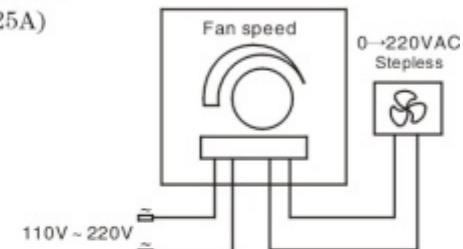
Working load current : 3A, 5A, 7.5A, 10A, 16A, 20A

Insulation voltage: 2500VAC

Gaussian: Press controller on the left of the red switch, open controller.

Non-polar control knob clockwise, through variable control, makes the fan-speeds from the smallest become the largest.

Overall dimensions: 145(L) \times 93(W) \times 60(H)mm



The product model : MFC-B(D)-110W(2A) MFC-B(D)-300W(3A) MFC-B(D)-500W(5A)
MFC-B(D)-750W(7A) MFC-B(D)-1KW(10A)

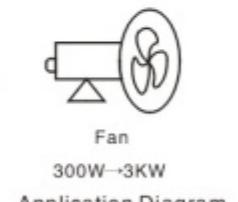
Voltage supply: 110VAC or 220VAC

Working load current : 2A, 3A, 5A, 7A, 10A, 15A, 20A

Insulation voltage: 2500VAC

Gaussian: When turn the knob anticlockwise to bottom, output switch close;

When turn the knob clockwise to larger, the output voltage build up from zero to max voltage.



Application Diagram

CTM Three Phase AC Voltage Regulating Module (It can be used as three phase fan speed controller)



Main Characteristic

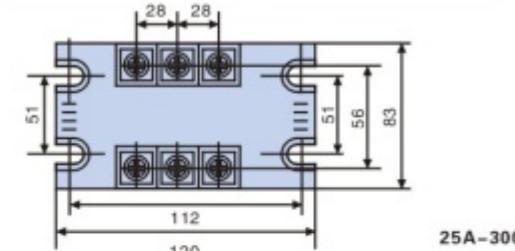
CTM isolation three-phase voltage regulating module sets three-phase potential detection, phase shifting circuit, trigger circuit and three groups of anti parallel one-way SCR at an organic whole, need not external synchronous transformer, through 1-5VDC, 2-10VDC 4-20mA signal, automatic control or external potentiometer manual control to achieve change conduction Angle is implemented three-phase load voltage from 0 to grid whole voltage of adjustable steplessly, widely used in industrial furnace, electric oven, lamplight illum, transformer primary surge in equipment such as temperature adjustment, dimmer, voltage regulating control, also applies to fan, pump motor control.

Performance Parameter

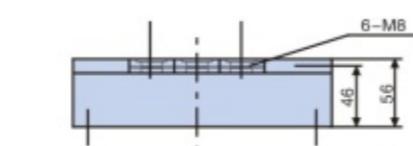
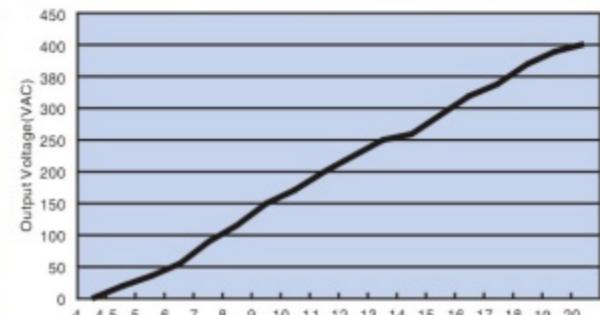


Type	CTM25A CTM40A CTM60A CTM80A CTM100A CTM120A CTM150A CTM200A CTM250A CTM300A
Load adjusting voltage	0-380VAC Continuous adjustable
Current ratings	25A, 40A, 60A, 80A, 100A, 120A, 150A, 200A, 300A
Control mode	0-5VDC, 2-10VDC, 4-20mA, 10K Potentiometer You can chose one of 3 ways
Isolation bet.In & out	≥2500VAC 1min
Isolation to case	≥2500VAC 1min
Turn to voltage	≥2VAC
Operating temperature	-40 - 80°C
Dimensions	120 × 83 × 56mm

Dimensions(mm):



Input and Output Graph



Three-phase fan speed controller

Performance Parameter

Three-phase integrated design, easy to install; input and output optical isolation; built-in thermal protection, and RC surge absorber circuit; regulate good linearity, anti-interference ability.



Performance Parameter

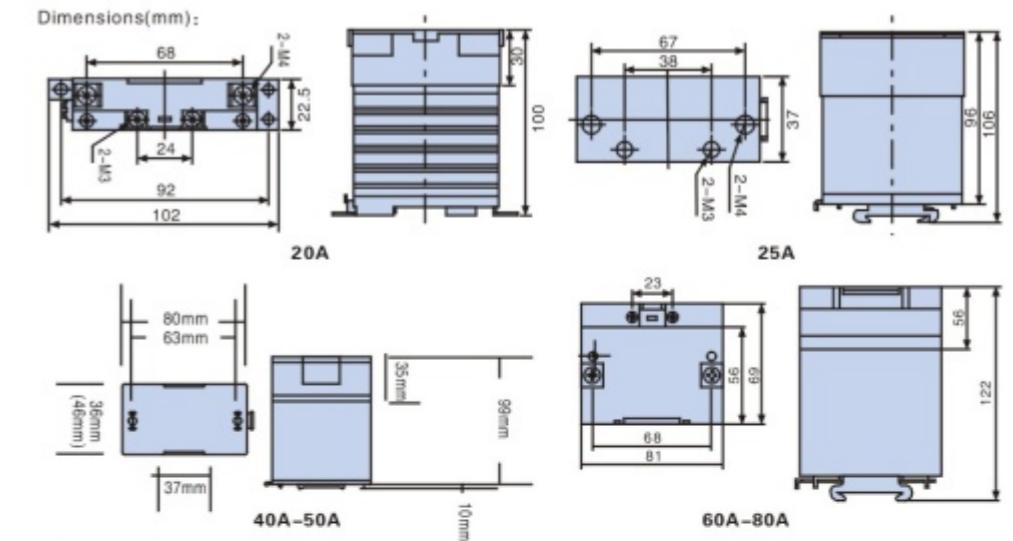
Type	MFC3-60A MFC3-80A MFC3-100A MFC3-120A MFC3-150A MFC3-200A MFC3-250A MFC3-300A
Load adjusting voltage	0-380VAC Continuously adjustable
Current ratings	25A, 40A, 60A, 80A, 100A, 120A, 150A, 200A, 300A
Control mode	1-5VDC, 2-10VDC, 4-20mA, 10K Potentiometer adjustable four ways to choose
Isolation bet.In & out	≥2000VAC 1min
Isolation to case	≥2500VAC 1min
Turn to voltage	≥2VAC
Operating temperature	-40 - 80°C
Dimensions	120 × 83 × 56mm



AC SSR All In Heatsink



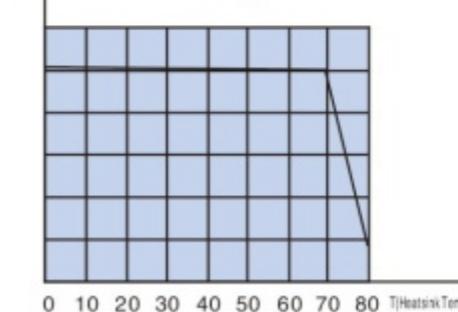
Main technical parameter	Type	SAH4820D, SAH4825D, SAH4840D, SAH4850D, SAH4860D, SAH4880D				
Input parameter	BCR or SCR Inverse parallel					48-600VAC
Voltage range(max VRMS)	1200VAC					
The max current(A)	20A	25A	40A	50A	60A	
Off state leakage(mA)(T=25°C Vmax)						3mA
Turn-on voltage(V) 1max,T=25°C						≤1.2VAC
Static (off state) dv/dt(V/us)						500V/us
Frequency range(Hz)						47/63Hz
Input voltage(V)						5-24VDC
Input control current						14-18(Automatic limit current)
Response time (close)						≤10ms max(0.5 cycle)
Response time(open)						≤10ms max(0.5 cycle)
Operating temperature						-40 - 80°C
Isolation bet.In&Out(VRMS)						≥2500VAC 1min
Insulation voltage(VISO)(VRMS)						≥2500VAC 1min
Material						Plastic-Shell inflaming retardant;Heatsink-Al
Input terminal						M3
Output terminal						M4、M5
Internal actual device	26A	41A	60A	70A	90A	



Rating Temperature Curve

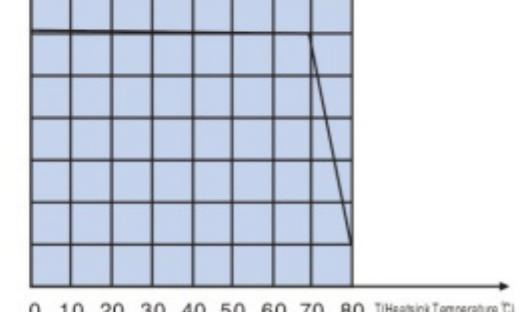
SAH(G3DA)4825(Example)

Nominal Current(A)



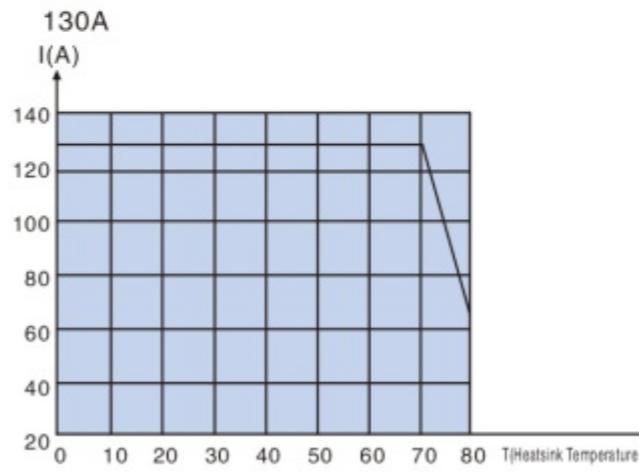
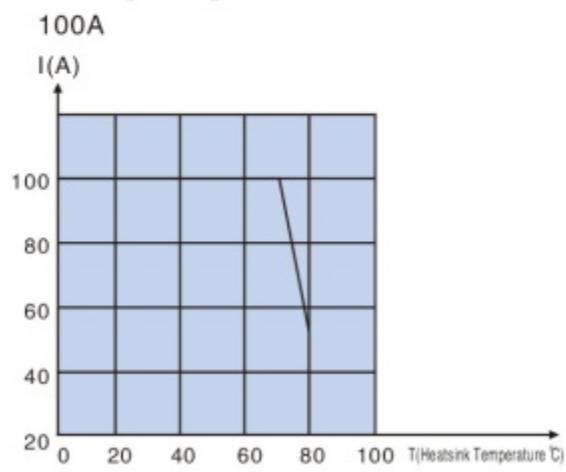
SAH(G3PA) Series 40A

Nominal Current(A)





Rating Temperature Curve

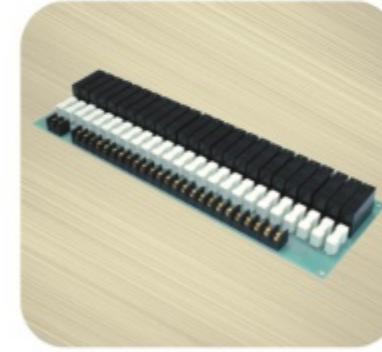
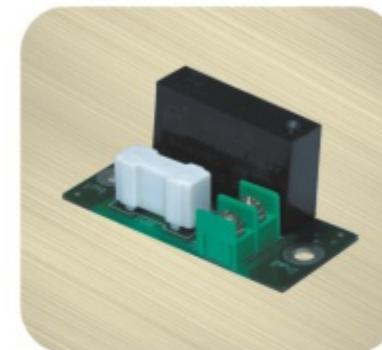
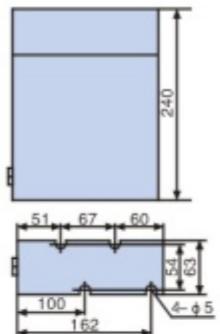


AC SSR All In Heatsink



Type	SAH Series
Main technical parameter	
Output parameter	SCR Inverse parallel, Zero switching
Voltage range(max VRMS)	48-660VAC
Peak value voltage(T=1min)(V)	1200VAC
The max current(A)	100A、130A、150A、200A、300A、400A
Off state leakage(mA)(T=25°C Vmax)	≤3mA
Turn-on voltage(V) tmax,T=25°C	≤1.3VAC
Static (off state)dv/dt(V/us)	500V/μs
Frequency range(Hz)	47/63Hz
Input voltage(V)	3.5-32VDC or 110VAC ± 15VAC
Input control current(mA)	8-30mA
Response time (close)	10ms, max 0.5 cycle
Response time(open)	10ms, max 0.5 cycle
Operating temperature	-40°C - 80°C
Isolation bet. In&Out(VRMS)	≥2500VAC 1min
Insulation voltage(VISO)(VRMS)	≥2500VAC 1min
Heatsink material	Al
Input terminal	Screw fixture
Output terminal	M8

Dimensions(mm):



Single solid state relay control board

Type: ML1CB
Input: 3-15VDC, 5-20mA
Response time: AC SSR≤10mA; DC SSR≤1mA
Three Output Type: ①3A/110VAC
②5A/240VAC
③2A/110VDC
Or customer choose
In and Out: Optical isolation 2000VAC
AC: Zero-cross switch

8 line solid state relay control board

Type: ML8CB
Input: 3-15VDC, 5-20mA
Response time: AC SSR≤10mA; DC SSR≤1mA
Three Output Type: ①2A/110VAC
②3A/240VAC
③2A/110VDC
Or customer choose
In and Out: Optical isolation 2000VAC
AC: Zero-cross switch

8 line solid state relay control board

Type: ML8CB
Input: 3-15VDC, 5-20mA
Response time: AC SSR≤10mA; DC SSR≤1mA
Three Output Type: ①5A/240VAC
②3A/110VDC
Or customer choose
In and Out: Optical isolation 2000VAC
AC: Zero-cross switch

20 line solid state relay control board

Type: ML20CB
Input: 3-15VDC, 5-20mA
Response time: AC SSR≤10mA; DC SSR≤1mA
Three Output Type: ①3A/110VAC
②5A/240VAC
③3A/110VDC
Or customer choose
In and Out: Optical isolation 2000VAC
AC: Zero-cross switch

Parameter Symbol Definition

Symbol	Classification	Definition
V_{RRM}	D	Repetitive peak reverse voltage
I_{RRM}	D,T	Repetitive peak reverse current
V_{FM}	D	Peak forward voltage
$I_{F(AV)}$	D	Average forward current
$I_{F(RMS)}$	D	Virtual value forward current
I_{DC}	D,T	Output current(D.C)
I_{FSM}	D	Surge forward current(Peak value)
I^T	D,T	I^T
V_{DRM}	T	Repetitive peak off-state voltage(V)
I_{DRM}	T	Repetitive peak off-state current(A)
V_{TM}	T	Peak on-state voltage(V)
$I_{T(AV)}$	T	Average on-state current(A)
$I_{T(RMS)}$	T	Virtual value on-state current(A)
I_{TSM}	T	Surge on-state current(Peak value)(A)
V_{GT}	T	Gate trigger voltage(V)
I_{GT}	T	Gate trigger current(A)
I_H	T	Holding current(A)
I_L	T	Latching Current(A)
dv/dt	T	Voltage build-up(A/ μ s)
di/dt	T	Current build-up(A/ μ s)
T_c	COM	Max. heat sink temperature($^{\circ}$ C)
T_j	COM	Max. Junction temperature($^{\circ}$ C)
$R_{th(jc)}$	COM	Crusting thermal resistance (Modules all chip - soleplate)($^{\circ}$ C/W)
R_{thcs}	COM	Contact heat resistance (Modules soleplate - radiators)($^{\circ}$ C/W)
V_{ISO}	COM	The terminal and the bottom insulation between (V_{RMS} for AC current virtual value)/V)



$I_{F(AV)}=20A \sim 500A$, $V_{RRM}=1600V$ or custom made, $T_{jm}=150^{\circ}\text{C}$, $V_{ISO} \geq 2.5\text{KV}_{(\text{RMS})}$
The parameters in the table are the ratings and characteristics of each diode chip in module

Suitable for types: MD, MDC, MDK, MDA

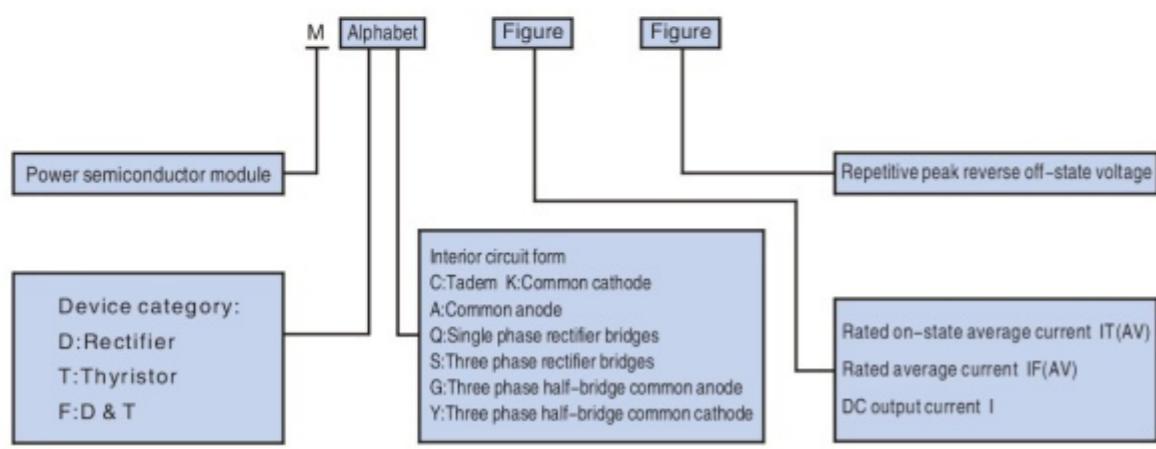
Rectifier Bridges Module

TYPE	$I_{F(AV)}$ Tc		V_{TM} (V)	I_{RRM} (mA)	$R_{th(j-c)}$ ($^{\circ}$ C/W)	$R_{th(c-h)}$ ($^{\circ}$ C/W)	Fig	Circuit
	(A)	($^{\circ}$ C)						
MD20	20	90	0.80	≤ 10	0.80	0.1	12	MD
MD50	50	90	0.80	≤ 10	0.80	0.1	12	MDC
MD100	100	90	0.80	≤ 10	0.55	0.1	13	MDK
MD200	200	90	0.80	≤ 10	0.23	0.05	13	MDA
MD300	300	90	0.80	≤ 10	0.28	0.05	3	
MD400	400	90	0.80	≤ 10	0.16	0.05	10	
MD500	500	90	0.80	≤ 10	0.15	0.05	10	
MD800	800	90	0.80	≤ 10	0.12	0.05	11	
MDC25	25	90	0.80	≤ 10	0.80	0.1	1	
MDC40	40	90	0.80	≤ 10	0.80	0.1	1	
MDC55	55	90	0.80	≤ 10	0.80	0.1	1	
MDC70	70	90	0.80	≤ 10	0.80	0.1	1	
MDC90	90	90	0.80	≤ 10	0.70	0.1	2	
MDC110	110	90	0.80	≤ 15	0.85	0.1	2	
MDC130	130	90	0.80	≤ 15	0.85	0.05	2	
MDC160	160	90	0.80	≤ 15	0.80	0.05	2	
MDC200	200	90	0.80	≤ 20	0.80	0.05	2	
MDC250	250	90	0.75	≤ 20	0.75	0.05	3	
MDC300	300	90	0.75	≤ 20	0.75	0.05	3	
MDC400	400	90	0.80	≤ 30	0.80	0.05	10	
MDC500	500	90	0.80	≤ 30	0.80	0.05	10	
MDC800	800	90	0.80	≤ 30	0.80	0.05	11	



Fig No.:Appearance and installation dimension drawing number(See P37 & P38)

Sort: D: diode T: thyristor COM: common (Parameters)

Model Explanation




MDC90A-200A

TYPE: **SDK30-16**

V_{RRM}: 1600V
Max Load Current: 30A
Dimensions: 80 × 29 × 27mm
Fixing size: 68mm, ϕ 7mm

TYPE: **SKB30-16**

V_{RRM}: 1600V
Max Load Current: 30A、60A
Dimensions: 71 × 60 × 31mm
Fixing size: 60mm, ϕ 5.9mm

TYPE: **IRKD70-16**

V_{RRM}: 1600V
Max Load Current: 70A
Dimensions: 40 × 27 × 26mm
Fixing size: 30mm, ϕ 4mm



TYPE: **SKCH50-16**
V_{RRM}: 1600V
Max Load Current: 50A
Dimensions: 71 × 60 × 31mm
Fixing size: 60mm, ϕ 5.9mm



I_{T(AV)}=20A ~ 800A, V_{DRM}=1600,1800V or custom made, T_{jm}=150°C, V_{iso}≥2.5KV
dv/dt≥500V/ μ s, V_{iso}≥2.5KV(RMS)

The parameter in the table are the ratings and characteristics of each thyristor (diode) chip in module

Suitable for types: MTC, M^T/_DC, MTK, M^T/_DK, MTA, MTX, M^T/_DX

Thyristor Modules


TYPE	IT(AV)Tc(I _T (RMS))		V _{GT} (V) (25°C)	I _{GT} (mA) (25°C)	I _{RRM} (mA)	V _{TM} (V)	R _{th(j-c)} (°C/W)	R _{th(c-h)} (°C/W)	Fig	Circuit
	(A)	(°C)								
MTC25	25	85	40	≤2.0	60±10	≤10	≤1.6	0.32	0.1	1
MTC40	40	85	65	≤2.0	60±10	≤10	≤1.6	0.26	0.1	1
MTC55	55	85	86	≤2.5	60±10	≤10	≤1.6	0.225	0.1	1
MTC70	70	85	110	≤2.5	60±10	≤15	≤1.6	0.172	0.1	1
MTC90	90	85	140	≤2.5	65±15	≤15	≤1.6	0.139	0.1	2
MTC110	110	85	170	≤2.5	65±15	≤15	≤1.6	0.110	0.05	2
MTC130	130	85	200	≤2.5	65±15	≤20	≤1.6	0.095	0.05	2
MTC160	160	85	250	≤2.5	70±15	≤20	≤1.8	0.090	0.05	2
MTC200	200	85	310	≤2.0	70±15	≤20	≤1.8	0.080	0.05	2
MTC250	250	85	390	≤2.5	75±15	≤20	≤1.8	0.060	0.05	3
MTC300	300	85	470	≤3.0	75±15	≤20	≤1.8	0.040	0.05	3
MTC350	350	80	550	≤3.0	75±15	≤30	≤1.8	0.040	0.03	10
MTC400	400	80	630	≤3.0	75±15	≤30	≤1.8	0.110	0.03	10
MTC500	500	80	785	≤3.0	80±15	≤30	≤2.0	0.084	0.03	10
MTC700	700	80	1010	≤3.0	85±15	≤50	≤2.0	0.076	0.03	11
MTC800	800	70	1256	≤3.0	85±15	≤50	≤2.0	0.050	0.03	11



TYPE: **SDK75-16**
V_{RRM}: 1600V
Max Load Current: 75A
Dimensions: 65 × 48 × 34mm
Fixing size: 50mm, ϕ 5mm



TYPE: **VUO125-16**
V_{RRM}: 1600V
Max Load Current: 125A
Dimensions: 67 × 50 × 31mm
Fixing size: 50mm, ϕ 7mm



TYPE: **VUO155-16**
V_{RRM}: 1600V
Max Load Current: 155A、200A
Dimensions: 94 × 53.7 × 30mm
Fixing size: 80mm, ϕ 6.5mm



TYPE: **SKKT160-16**
V_{RRM}: 1600V
Max Load Current: 160A、200A
Dimensions: 95 × 34 × 29mm
Fixing size: 80mm, ϕ 6mm



TYPE: **SKKT300-16**
V_{RRM}: 1600V
Max Load Current: 300A、400A
Dimensions: 115 × 50 × 53mm
Fixing size: 80 × 38mm, ϕ 6mm



TYPE: **SKKH400-16**
V_{RRM}: 1600V
Max Load Current: 400A、500A
Dimensions: 150 × 60 × 54mm
Fixing size: 112 × 48mm, ϕ 6mm



MDG35A-150A



MDG70A-150A



MTG55A-110A



MTG70A-150A


PWB150AA16
150A

$I_{F(AV)}=35A \sim 300A$, $V_{RRM}=800V, 1600V$ or custom made, $T_{jm}=150^\circ C$
The parameters in the table are the ratings and characteristics of each diode chip in module

Suitable for types: MDG, MDY

Three Phase Half Bridge Rectifier Modules(non-isolated type)



TYPE	$I_{F(AV)}$		T_c (°C)	V_{TM} (V)	I_{DRM} (mA)	$R_{th(j-c)}$ (°C/W)	$R_{th(c-h)}$ (°C/W)	Fig	Circuit
	(A)	(°C)							
MDG35	35	100	≤ 1.3	≤ 10	0.65	0.1	8		
MDG55	55	90	≤ 1.3	≤ 10	0.47	0.1	8		
MDG70	70	90	≤ 1.3	≤ 10	0.38	0.1	8		
MDG90	90	85	≤ 1.3	≤ 10	0.29	0.1	8, 16		
MDG110	110	85	≤ 1.3	≤ 10	0.23	0.1	8, 16		
MDG130	130	85	≤ 1.3	≤ 15	0.19	0.05	8, 16		
MDG150	150	85	≤ 1.3	≤ 15	0.16	0.05	8, 16		
MDG200	200	85	≤ 1.5	≤ 15	0.126	0.05	8, 16		
MDG250	250	85	≤ 1.5	≤ 20	0.100	0.05	See website		
MDG300	300	80	≤ 1.5	≤ 20	0.083	0.05	See website		


TYPE: MTQ60A
VRRM: 1600V
Max Load Current: 60A
Dimensions: 80×40×27mm
Fixing size: 66mm, $\phi 6.5mm$


MTDQ30A-100A



MTS35A-100A

$I_{T(AV)}=25A \sim 300A$, $V_{DRM}=V_{RRM}=600V, 1600V$ or custom made, $T_{jm}=125^\circ C$,
 $dv/dt \geq 500V/\mu s$

The parameters in the table are the ratings and characteristics of each thyristor chip in module

Suitable for types: MTG, MTY

Three Phase Half Bridge Thyristor Modules(non-isolated type)



TYPE	$I_{T(AV)}$		T_c (°C)	V_{GT}		IGT (MA)	V_{TM} (V)	I_{DRM} (mA)	$R_{th(j-c)}$ (°C/W)	$R_{th(c-h)}$ (°C/W)	Fig	Circuit
	(A)	(°C)		(V)	(MA)							
MTG25	25	85	≤ 2.0	60 ± 10	≤ 1.3	≤ 10	1.15	0.1	8			
MTG40	40	85	≤ 2.0	60 ± 10	≤ 1.3	≤ 10	0.65	0.1	8			
MTG55	55	85	≤ 2.0	60 ± 10	≤ 1.3	≤ 10	0.47	0.1	8			
MTG70	70	85	≤ 2.5	60 ± 10	≤ 1.3	≤ 15	0.38	0.1	8			
MTG90	90	85	≤ 2.5	65 ± 15	≤ 1.3	≤ 15	0.29	0.1	8, 16			
MTG110	110	85	≤ 2.5	65 ± 15	≤ 1.3	≤ 15	0.23	0.1	8, 16			
MTG130	130	85	≤ 2.5	65 ± 15	≤ 1.3	≤ 20	0.19	0.05	8, 16			
MTG150	150	80	≤ 2.5	70 ± 15	≤ 1.5	≤ 20	0.16	0.05	8, 16			
MTG200	200	80	≤ 2.5	70 ± 15	≤ 1.5	≤ 20	0.126	0.05	8, 16			
MTG250	250	80	≤ 2.5	75 ± 15	≤ 1.5	≤ 30	0.100	0.05	See website			
MTG300	300	75	≤ 3.0	75 ± 15	≤ 1.6	≤ 30	0.083	0.05	See website			


TYPE: DFA60AA16
VRRM: 1600V
Max Load Current: 60A
Dimensions: 93×50×21mm
Fixing size: 80mm, $\phi 5.3mm$


$I_d=30A \sim 500A$, $I_{jm}=125^\circ C$, $V_{DRM}=V_{RRM}=1600V$ or custom made, $V_{ISO} \geq 2.5KV_{(RMS)}$
 $dv/dt \geq 500V/\mu s$

The parameters in the table are the ratings and characteristics of each thyristor chip in module(Except for I_d)

Suitable for types: MTQ, MTF, MHF, MD/TF, MT/DQ, MT/DF

Single Phase Full-controlled (half controlled) Rectifier Bridges Modules



TYPE	I_d		T_c (°C)	V_{GT}		IGT (mA)	V_{TM} (V)	I_{DRM} (mA)	$R_{th(j-c)}$ (°C/W)	$R_{th(c-h)}$ (°C/W)	Fig	Circuit
	(A)	(°C)		(V)	(mA)							
MTQ30	30	85	$0.8 \pm 0.1V$	40 ± 10	≤ 8	≤ 1.6	1.4	0.1	4, 5			
MTQ60	60	85	$0.8 \pm 0.1V$	40 ± 10	≤ 10	≤ 1.6	0.76	0.1	4, 5			
MTQ100	100	85	$0.8 \pm 0.1V$	45 ± 10	≤ 15	≤ 1.6	0.49	0.1	4, 5			
MTQ150	150	80	$0.8 \pm 0.1V$	45 ± 10	≤ 15	≤ 1.6	0.3	0.05	6			
MTQ200	200	80	$0.95 \pm 0.15V$	45 ± 15	≤ 20	≤ 1.6	0.25	0.05	6			
MTQ250	250	80	$0.95 \pm 0.15V$	50 ± 15	≤ 20	≤ 1.8	0.29	0.05	6			
MTQ300	300	80	$1.0 \pm 0.2V$	55 ± 15	≤ 20	≤ 1.8	0.24	0.05	6			


TYPE: DFA100AA16
VRRM: 1600V
Max Load Current: 100A
Dimensions: 108×62×28mm
Fixing size: 80mm, $\phi 6.4mm$

Features: Advanced glass passivation technology, sensitive control extremely trigger current, low on state, passed the ROHS certification.
Characteristic: used for various universal switch device, small motor controller, the lantern controller, leakage protector, logic integrated circuit drive, motorcycle ignition circuits, etc.



BTA6A-24A

BTA6, 8, 12, 16, 24 Triac

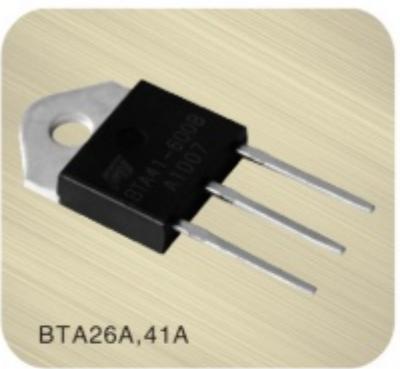
Limit Parameter

V _D R _M (V)	V _R R _M (V)	I _T (AVS) (A)	I _T S _M (A)	T _I (°C)	T _S ig (°C)	Fig
≥800	≥800	6,8,12,16,24	10×I _T	-40~125	-40~150	17

Electrical Characteristics(T_j=25°C)

V _T M (V)	V _D R _M (mA)	I _G T (mA)	V _G T (V)	I _H (mA)	D _{v/dt} (V/μS)	R _{je} (°C/W)
1.35(Typical value)	≤1	25(Typical value)	≤1.2	40(Typical value)	≥200	2.0(Typical value)

Dimensions see P32 Fig17



BTA26A,41A

BTA26, 41 Triac

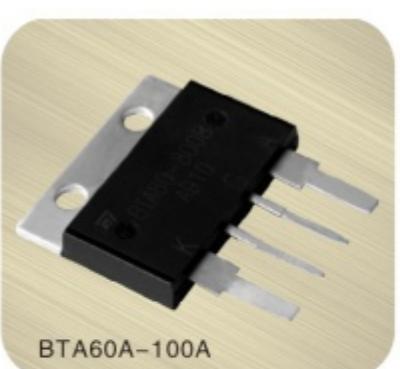
Limit Parameter

V _D R _M (V)	V _R R _M (V)	I _T (RMS) (A)	I _T S _M (A)	T _I (°C)	T _S ig (°C)	Fig
≥800	≥800	26,41	10×I _T	-40~125	-40~150	18

Electrical Characteristics(T_j=25°C)

V _T M (V)	V _D R _M (mA)	I _G T (mA)		V _G T (V)	I _H (mA)	D _{v/dt} (V/μS)	R _{je} (°C/W)		
1.50 (Typical value)	≤1	T2+G+ ≤50	T2+G- ≤50	T2-G- ≤50	T2-G+ ≤100	≤1.3	≥60	≥500	≤1.0

Dimensions see P32 Fig18



BTA60A-100A

BTA60, 80, 100 Triac

Limit Parameter

V _D R _M (V)	V _R R _M (V)	I _T (RMS) (A)	I _T S _M (A)	T _I (°C)	T _S ig (°C)	Fig
≥800	≥800	60,80,100	10×I _T	-40~125	-40~150	19

Electrical Characteristics(T_j=25°C)

V _T M (V)	V _D R _M (mA)	I _G T (mA)		V _G T (V)	I _H (mA)	D _{v/dt} (V/μS)		
1.50 (Typical value)	≤1.5	T2+G+ ≤50	T2+G- ≤50	T2-G- ≤50	T2-G+ ≤80	≤1.3	80 (Typical value)	≥500

Dimensions see P32 Fig19

SAM3E Series Solid State Complete Appliance



SAM3E60A



SAM3E120A



SAM3E200A

Function and Characteristic

- ◆ Assemble design of heatsink, air cooled, protection function for overcurrent,overheat.
- ◆ Power input/output all adopts copper platoon derivation, the consumer use convenient.
- ◆ Preparation overload fuse, reliable protection for loading and solid-state relay over-current.
- ◆ Internal thermal protection switch, when radiator surface temperature reaches 80 degrees automatically disconnect control signal, avoid temperature exorbitant cause controller damage. Panel respectively have control signals, and overheat instructions.
- ◆ Input control signal 12~32VDC optional, fan motor use 220VAC.
- ◆ This patented product use cabin fan directional duct type forced air cooling device (Patent NO.: ZL200820037648.6).
- ◆ This patented product three-phase insulation wiring stents (Patent No.: ZL201020103927.5) to meet insulation standards.
- ◆ Applicable widely: industrial furnace, oven, water pump, motors, electrical switchgear, textile, fountain automation control equipment.

Product Select Table

Specification model	Adapting power (three-phase 380V)	Build in module	Heatsink	Install hole spacing (mm)	Dimensions (L×W×H) (mm)	Fuse specification (A)	Fuse mounting type
SAM3E40100D	22~33KW	SAM40100D	E150	100×130	195×140×190	60A	Addition
SAM3E40120D	27~39KW	SAM40120D	E180	130×130	225×140×190	75A	Addition
SAM3E40150D	35~51KW	SAM40150D	E210	160×130	255×140×190	100A	Built in
SAM3E40200D	46~62KW	SAM40200D	E250	200×130	295×140×190	125A	Built in
SAM3E40250D	51~73KW	SAM40250D	E300	250×130	345×140×190	140A	Built in
SAM3E40300D1	55~79KW	SAM40300D	E350	300×130	395×140×190	175A	Built in
SAM3E40300D2	60~83KW	SAM40300D	E400	350×130	445×140×190	175A	Built in

CTH Series Three Phase Voltage Regulator



Attention Before Model Select

When place an order instruction:

- ◆ Load type: three-phase electrical heating
- ◆ Load rated power
 - 1. The rated input voltage; 2. rated work current
- ◆ Type of control choice(optional)
 - 1. Manual potentiometer adjust: 2.2~470 K
 - 2. Automatic control signal: 4~20mA
 - 3. Automatic control signal: 1~5VDC, 2~10VDC

Product Introduction

1. The panel have several LED lights, display the working condition and failure cause of voltage regulator, to convenient maintenance ontime.
2. PC board adopts SMD paster, anti-jamming ability and low failure rate.
3. Contains slow start function, speed smoothly make components more durable.
4. Proportion type linear output, and the temperature control precision, accuracy 0.3% accord with all kinds of load requirements.
5. Input type: 4~20mA, DC1 DC2~10V ~ 5V, three types of automatic switching selection by P1 JUMP do not need to change the host.
6. All series installs the fast fuse and overheating bring stop output to protection switches, and protect voltage regulator.
7. The main power and PC board working voltage without sequence relations, use convenient (50HZ ~ 60HZ automatic identification).
8. Installed on the closed type control cabinet must air convection hole and cooling fan, if the radiating is not good please selection less than 70% power use, otherwise it will cause power controller overheating protection function start to stop output.



Product Selection



CTH-I Three Phase Voltage Regulator Selection, Installation Dimensions and Fuse Configuration						
Specification model	Rated power	Rated current	Install hole spacing (mm)	Dimensions (L×W×H) (mm)	Fuse specification (A)	Fuse mounting type
CTH-I-30KW	30KW	53A	164×127	345×139×191	60	Built in
CTH-I-50KW	50KW	88A	204×127	345×139×191	80	Built in
CTH-I-70KW	70KW	123A	254×127	345×139×191	125	Built in
CTH-I-90KW	90KW	158A	304×127	395×139×191	140	Addition
CTH-I-110KW	110KW	193A	354×127	445×139×191	175	Addition

Description: 110KW and more than 110KW power that the fuse for structure problem won't install, can provide to user installation when delivery the goods.

Note: Above products are mainly suitable for electrical heating load, indicate rated power and rated current, just only selection as less than rating value.

Control mode: 4~20mA current regulation; 1~5VDC voltage regulation; 2~10VDC voltage regulation total three control mode selection. Rated current include 15% overload design margin in the form.

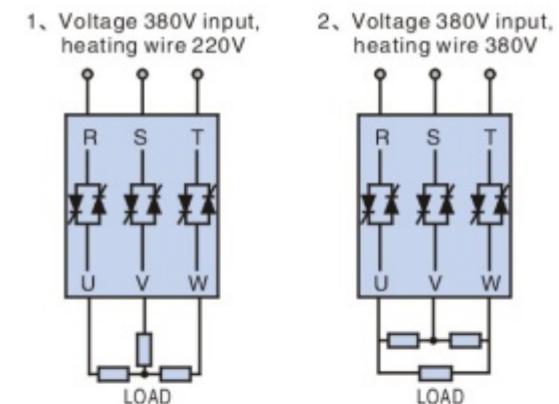
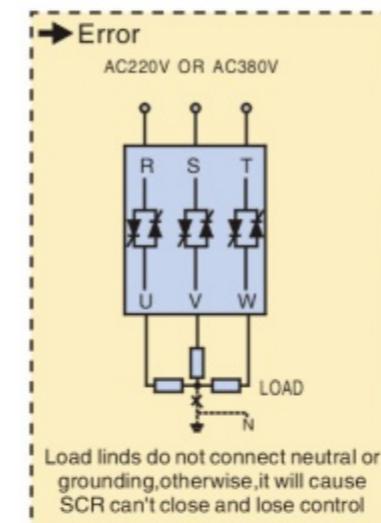
The user should show the control mode when selection, so that factory adjusted to the best state.

Attention

- ◆ Outgoing products are already through strict test, wiring to confirm correct can be used.
- ◆ When product inspection recommend use 3 pcs (power $\geq 100W$) light bulb connect into star shapes for load testing, if testing normal put into use, pay attention to adjusting public point of star shapes can't touch the neutral.
- ◆ Control cabinet must air convection hole and cooling fan, enviroment temperature must be less than 55 °C.
- ◆ When selection model if the power system and voltage over-tension (more than 15%), should enlarge product power specifications or increase the level.

Simple Maintenance Introduce

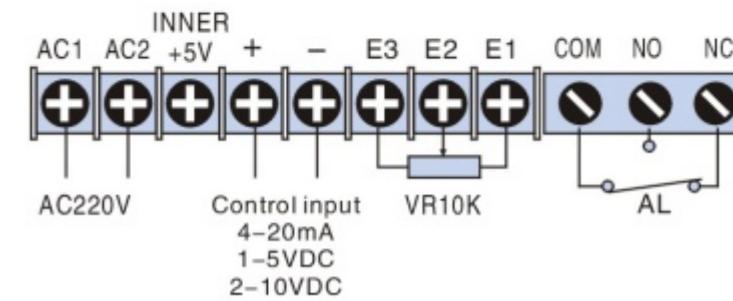
1. Responsible for test
Current not connection or load current less than 0.6, SCR doesn't work. (load must be greater than 0.6 A)
2. Fault Phenomena SCR can't turn off, there have been output, the output current about normal value 20%~50%
 - ◆ Maybe SCR panel (BIAS) potentiometer transfer, please counter-clockwise transfer to the minimum.
 - ◆ Load lines do not connect neutral or grounding, otherwise, it will cause SCR can't close and lose control.
 - ◆ Using multimeter measure load and machine body is short-circuit or not.



Heating wire load wiring diagram

3. (SCR) no output, no current

- ◆ Panel (PWL) indicator not bright, SCR can't work, check the fuse burn out or not.
- ◆ Check IN and OUT lighten or not. If num locks please check have signal input or not, such as 4~20mA or DC2~10V
- ◆ Maybe SCR panel (MAX) potentiometer transfer. Please clockwise transferred to the maximum or E3, E2 not short circuit
- ◆ ERRO lights up, stop output. Means SCR overtemperature. Check the Fan work normal or not or improve control cabinet air system
- ◆ FB lighten, stop output. Means SCR fuse burned, please check load is short circuit or not, or grounding load caused, replace the fuse
- ◆ Please face up when installation, make hot gas gets to emanate



Intelligence Temperature Controller Series



The Brief Introduction

Our engineer use American gold control corporation's new technology to design this item temperature control meter. It is together with the power regulators and solid state relays. They match together can make it be more correct to control the temperature, to ensure the temperature controller and solid state relays be compatible and matched together. they are 2 types temperature controller ,one is match for the solid state relays ,and it control the temperature advance gradually. And another type is matched with solid state relay with the sectional type program control.

The Main Characteristics

- The input we use number correct system ,and inside we use regular heat resistance, and thermocouple no-linear orthogonal format, the measure is correct and stable .
- ON-OFF CONTROL, expert PID intelligence control and other variety ways of control. The advanced expert PID intelligence algorithm have the stable and self learning function ,not more or less on the control. It is good characters for controlling.
- Module output support ssr voltage, line-voltage and line current (voltage), the SSR touch switch and controllable silicon no-touch switches, one phase ,and three phase controllable silicon zero-crossing touch' and one phase controllable phase shifte touch' output .
- Heating and refrigeration double output controllable function ,and support heating and cooling output well-mixed as line-current output application .
- Self-defined alarming function ,support the upper limit and normal deviate and mins deviation such many alarming function ,and it self-defined the output terminals of the output (AL1-AL2, AU1 and AU2) and avoiding mistaking actions of the alarming, and supporting many alarming signals sending from one position, and adopt the new generation , and use high degree of accuracy current output module .0.2 level output accuracy and prior 100ppm/°C temperature drifting characteristics' current output .
- Support RS485 communication interface, to match up to quickly communication can make up thousands of large scale of big or medium computer controller system .
- Programmable machine control many sections ,can realize arbitrarily slope's rise and the control of the lowering of the temperature .it has the jumped to move in circles, run out, and pause and stop other programmable, can operate the command, and permit to modify the program during the controlling of the program. Using the expert intelligence regulator arithmetic which can have curves fitting functions ,can get the smooth-going curves controlling functions.
- It can edit the event output function during the controlling of the program, and match up to control the actions of the outer equipments.
- The programmable control have the functions to the starting the measures and it contains five ways of solving stop or starting modes .
- The outer control can input the switches date and can swift SV1 /SV2 or use programmable control /pause or stop operation .
- It have the limit rights of defining and check ing and modifying the parameters, and permit the users to define the password.

Heat Sink

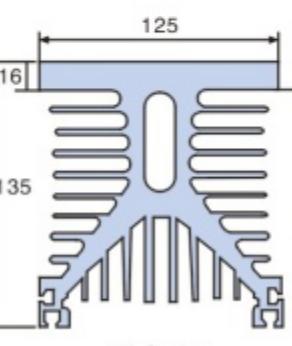
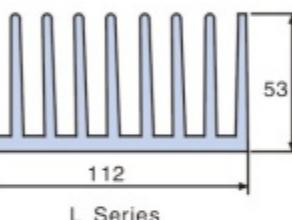
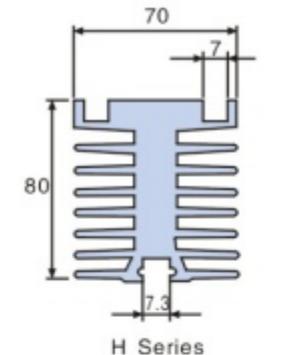
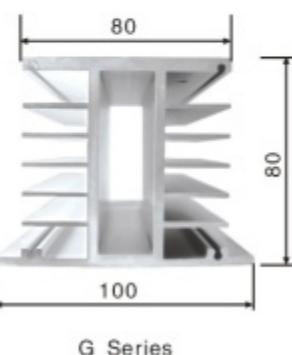
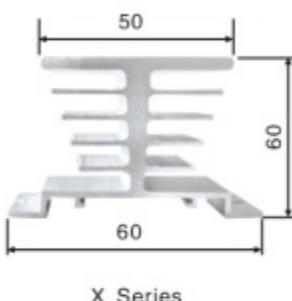
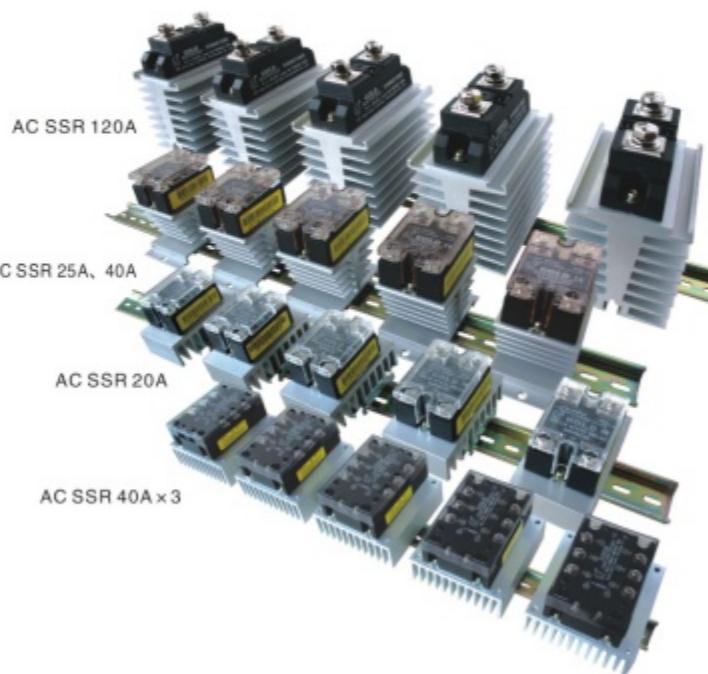
Solid state relay when it is starting , on-state so it will reduce the voltage ,so it will produce heat, 1A working current equals to 1W heat, so when the working current is exceeding 5A, it needs to deploy heat sink .Follows as the suggestion for loading the voltage of the solid state relays:

One phase ssr current	Heatsink type	One phase ssr current	Heatsink type
5A	Special clip of guide rail	80A	H80
10A	X50	90A	H100
15A	X75	100A	H120 H100
20A	R75	120A	H120
25A	H60/R75	150A	H160
30A	H60/R75	200A	H180
40A	H60	250A	W80
50A	H80	300A	W110
60A	H80	400A	W125

Three phase ssr current	Heatsink type	Three phase ssr current	Heatsink type
10A	G110	100A	W110
15A	G110	120A	W125
20A	G110	150A	W155
25A	L150	200A	W170
30A	L150	250A	W210
40A	L180	300A	W300
60A	C125	400A	3 x W125
80A	L150 C125	/	/

Attention the name of the heatsink's type is S R W H C G the exterior of the cross-section, pictures show as follows) The length of the heatsink ,we can define it ourselves .If the load is motors ,the heatsink can be reduce .The heatsink is have the paralleled installation cassette ,it can directly installed to general parallel .

Application Example of Solid State Relay Series Products



Special Fast-fuses for Semiconductor Module



Fuse's Core



Fuse's Outer Covering



Rail Clip



2 \$

Thermal Grease



1.2 \$

Use

This series fit fuses is suitable for use AC 50HZ, and the rated voltages is up to 600v, and the rated current is up to 160 A, the fuses speed is very fast so it is very suitable for the protection of the short circuit of solid state relays, semiconductors, and the complete sets of equipment and the the protection of the short circuit motors.

This kind of series products is very suitable for national standard Gb1539 and international electrotechnical commission standard IEC269.

Structures Characteristics

The varied cross section is made by pure copper or silver pieces and sealed in fuse tube which made by high degree of intensity porcelain or epoxy glass cloth. The tube is full filled with the chemical processed high purity quartz sand as the medium. The fuse's two terminal is welding strongly with the fuses .The fuses can have the crash machine, when the fuse is melting, the crash machine will work at once, and it push the micro switches, and sending all kinds of signals or automatic alter the circuit.

This series fuses displays as insert structure, the size can be installed to RT14, RT18, RT19 and other related sizes to support the fuses.

Selection Table About Solid State Relays & Fuses



Load long time working current	SSR Type	Fuses type
10A	20A	15A
25A	40A	30A
35A	60A	40A
45A	80A	50A
55A	100A	60A
65A	120A	75A

Check List of Power Semiconductor Module

TYPE	GERMEN SEMIKRON	JAPAN SANREX	GOLD ELECTRIC
Thyristor Modules	SKKT15, 27, 42, 57, 72, 92, 106, 122, 132	PK25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 500	MTC25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 300, 400, 500, 800
	SKKH15, 27, 42, 57, 72, 92, 106, 122, 132	PD25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 500	MDTC25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 300, 400, 500, 800
	SKKL92	PE25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 500	MTDC25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 500, 600, 800
	SKMT92	KK25, 40, 55, 70, 90, 110, 130, 160	MTK25, 40, 55, 70, 90, 110, 130, 160
	SKKD15, 26, 46, 81, 100	DD25, 30, 40, 55, 60, 70, 90, 100, 110, 130, 160, 200, 240, 250, 300	MDC25, 40, 55, 70, 90, 110, 130, 160, 200, 250, 300, 350, 400, 500
SKMD100	KD25, 30, 40, 55, 60, 70, 90, 100, 110	MDK25, 30, 40, 55, 60, 70, 90, 100, 110	MDQ10, 20, 30, 60, 75, 100, 150, 200, 300
Three Phase Half Bridge Rectifier Moudules(non-isolated type)	-	DWF40, 50, 70, 100	MDY40, 50, 70, 100, 150
Three Phase Half Bridge Thyristor Modules (non-isolated type)	-	DWR40, 50, 70, 100	MDG35, 55, 70, 90, 110, 130, 150, 200, 250, 300
Single Phase Rectifier Bridges Modules	SKB50, 60, 70	-	MTG25, 40, 55, 70, 90, 110, 130, 150, 200, 250, 300
Single Phase Half Controlled Rectifier Bridges Modules	SKBH28	-	M'/Q30, 60, 100, 150, 200, 250, 300
Single Phase Full-controlled Rectifier Bridges Modules	SKCH28, 40	-	-
Three Phase Rectifier Bridges Modules	SKBT28, 40	-	MTQ30, 60, 100, 150, 200, 250, 300
Three Phase Half Controlled Rectifier Bridges Modules	SKD31, 33, 51, 53, 60, 62, 82, 83, 100, 110, 115, 145, 160, 210	DF20, 30, 40, 50, 60, 75, 100, 150, 200	MDS25, 35, 60, 75, 100, 150, 200, 250, 300
Three Phase Full-controlled Rectifier Bridges Modules	SKDH100, 115, 145	-	MDTS60, 75
Three Phase Half Controlled Rectifier Bridges Modules	SKDT60, 110, 140	-	MTS30, 60, 100, 150, 200, 300, 400, 500, 600, 700, 800



Outline & Installation Dimensions

JIANGSU GOLD ELECTRICAL CONTROL TECHNOLOGY CO.,LTD.



Outline & Installation Dimensions

JIANGSU GOLD ELECTRICAL CONTROL TECHNOLOGY CO.,LTD.

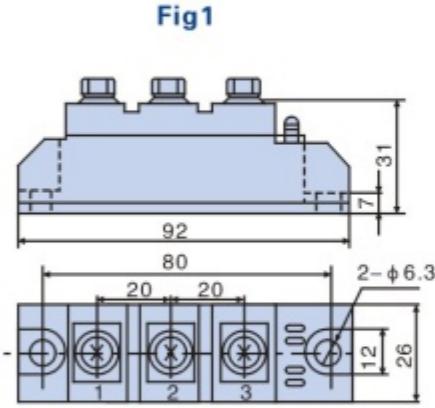


Fig4

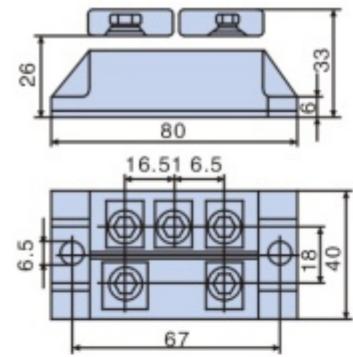
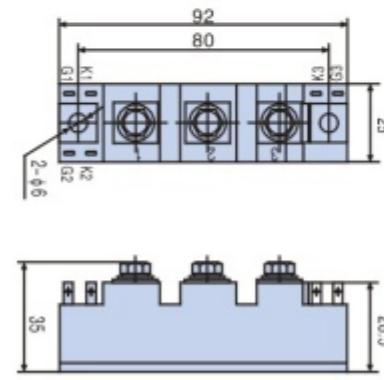


Fig7



Fig

The figure consists of two parts: a top view and a bottom view of a mechanical part. The top view shows a rectangular base with a central slot, two vertical fins on the left, and a vertical fin on the right. Dimensions include height 6, width 53, a slot width of 28 x 0.8, and a total width of 32.5. The bottom view shows a square base with four circular holes arranged in a cross pattern. Dimensions include side lengths of 53, 33, and 20, a central distance of 80, a total width of 92, and a total length of 118. A note indicates 4 - ϕ 5.5.

Fig13

94

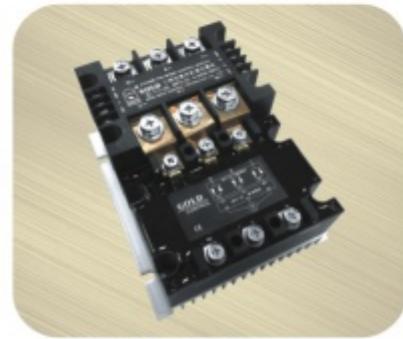
80



International OEM products

JIANGSU GOLD ELECTRICAL CONTROL TECHNOLOGY CO.,LTD.

OEM and customized products instance



OEM Fan controller for
Huawei



OEM Dedicated SSR for
Italy company



Supply SCR module for
National defense



OEM Rectifier bridge module
for US.Carrior company



OEM 150A SSR for
Turkey customer



OEM 130AC SSR(All-in heatsink)
for glasstech.co.,ltd.USA



Design SSR with fuse for
Taiwan customer



OEM SSR with safe cover
for USA customer



OEM three-phase 150A SSR
for Russia customer



Design Single-phase fan speed
controller for Canada, Russia



OEM Rectifier Bridge Module
for European trucks company



OEM 10A Voltage regulator
module for Turkey customer

Quality Policy

The technique innovation makes sure to create quality products, satisfactory service and unceasingly advancing standard meets the increasing requirements of the customers.



Technique debugging



Development of new product



Chip inspection



Middle inspection



Epoxy quantitative elutriator



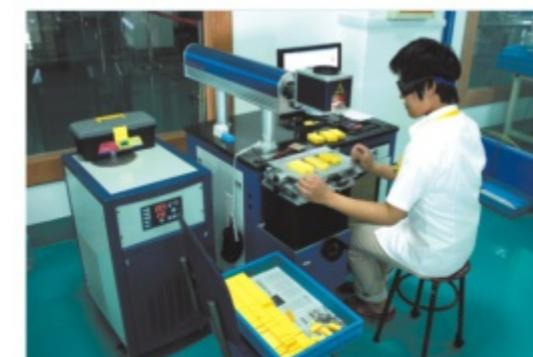
Nitrogen protection and vacuum-sintering



100% Inspection with load 100%



The engineers make craft testing



Identification of laser printing



Manufacturing shop



Packing and delivery



GOLD
Innovation and Service

GOLD ELECTRIC



Qualification & Honor

JIANGSU GOLD ELECTRICAL CONTROL TECHNOLOGY CO.,LTD.

The company's honor and intelligence

Wuxi city's famous brand products

Wuxi city's export advanced enterprise

Jiangsu province's high technology private enterprise Jiangsu province's high technology private enterprise

Jiangsu province's famous brand products

Jiangsu province's high technology company

National high & new technology enterprise



Business license



UL Certificate of America & Canada



TUV Certificate



ISO 9001 Certificate

ISO14001 Environment system certificate



One phase Miseries SSA

Three solid pressure regulation module

Silicon controlled power regulated

Fan speed controller

Three-phase motor positive and negative control module



Three-phase voltage control relay

Single phase rectifier modules

SAM3E solid state relay complete appliance

DC solid state relay

LED drive power

22 Item patent certificates about power semiconductor

Since 1992, we have made great progress